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ELECTRICAL INSULATING IMPREGNATING VARNISHES BT-980, BT-987 AND--ETC(U)
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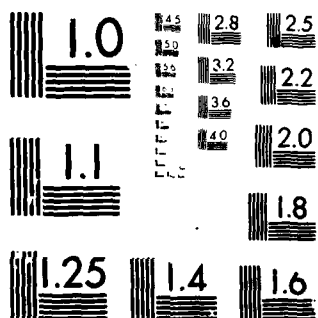
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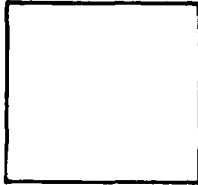


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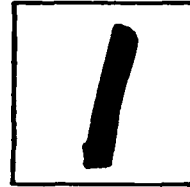
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FOREIGN TECHNOLOGY DIVISION



ELECTRICAL INSULATING IMPREGNATING VARNISHES
BT-980, BT-987 AND BT-988



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EDITED TRANSLATION

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11 July 1979

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ELECTRICAL INSULATING IMPREGNATING VARNISHES
BT-980, BT-987 and BT-988

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Date 11 July 19 79

U. S. BOARD ON GEOGRAPHIC NAMES TRANSLITERATION SYSTEM

Russian	Italic	Transliteration	Block	Italic	Transliteration
А а	<i>А а</i>	A, a	Р р	<i>Р р</i>	R, r
Б б	<i>Б б</i>	B, b	С с	<i>С с</i>	S, s
В в	<i>В в</i>	V, v	Т т	<i>Т т</i>	T, t
Г г	<i>Г г</i>	G, g	У у	<i>У у</i>	U, u
Д д	<i>Д д</i>	D, d	Ф ф	<i>Ф ф</i>	F, f
Е е	<i>Е е</i>	Ye, ye; E, e*	Х х	<i>Х х</i>	Kh, kh
Ж ж	<i>Ж ж</i>	Zh, zh	Ц ц	<i>Ц ц</i>	Ts, ts
З з	<i>З з</i>	Z, z	Ч ч	<i>Ч ч</i>	Ch, ch
И и	<i>И и</i>	I, i	Ш ш	<i>Ш ш</i>	Sh, sh
Й й	<i>Й й</i>	Y, y	Щ щ	<i>Щ щ</i>	Shch, shch
К к	<i>К к</i>	K, k	Ъ ъ	<i>Ъ ъ</i>	"
Л л	<i>Л л</i>	L, l	Ы ы	<i>Ы ы</i>	Y, y
М м	<i>М м</i>	M, m	Ь ь	<i>Ь ь</i>	'
Н н	<i>Н н</i>	N, n	Э э	<i>Э э</i>	E, e
О о	<i>О о</i>	O, o	Ю ю	<i>Ю ю</i>	Yu, yu
П п	<i>П п</i>	P, p	Я я	<i>Я я</i>	Ya, ya

*ye initially, after vowels, and after Ъ, Ь; e elsewhere.
When written as ё in Russian, transliterate as yë or ë.

RUSSIAN AND ENGLISH TRIGONOMETRIC FUNCTIONS

Russian	English	Russian	English	Russian	English
sin	sin	sh	sinh	arc sh	arcsin
cos	cos	ch	cosh	arc ch	arccos
tg	tan	th	tanh	arc th	arctan
ctg	cot	cth	coth	arc cth	arccot
sec	sec	sch	sech	arc sch	secant
cosec	csc	cscn	csch	arc csch	cosecant

Russian English

rot curl
lg log

ELECTRICAL INSULATING IMPREGNATING VARNISHES
BT-980, BT-987 AND BT-988

GOST 6244-70, REPLACES GOST 6244-52

By Resolution of the Committee of Standards, Measures and Measuring Instruments Attached to the Council of Ministers of the USSR from 13 January 1970 No. 37 the Period of Introduction is Established from 1 January 1971.

Nonobservance of the standard is punishable by law

This standard is extended to the electrical insulating impregnating varnishes, which are solutions of alloys of oil bitumens (or mixtures of oil bitumens with asphalts) and vegetable oils in organic solvents with the addition of a desiccant.

Varnishes of brands BT-980, BT-987 and BT-988 are intended for the impregnation of windings of electrical equipment.

1. Brands and technical requirements

1.1 Depending on the composition, the impregnating varnishes are produced in the following brands:

- varnish BT-980 (formerly No. 460);
- varnish BT-987 (formerly No. 447);
- varnish BT-988 (formerly No. 458):

1.2 According to the physicochemical and electrical indices, varnishes of brands BT-980, BT-987 and BT-988 must conform to the requirements and standards indicated in the table.

TABLE

Name of indices	Standards for brands		
	BT-980	BT-987	BT-988
1. The presence of mechanical impurities in the varnish	Absent		
2. Color and outer appearance of film of the varnish	After desiccation the varnish must form a glossy smooth uniform film		
3. Viscosity according to the viscosimeter VZ-4 at 20°C in s	30-60	30-60	30-60
4. Content of dry residue in %, not less than	40	40	40
5. Time of desiccation at 105-110°C in hours, not more than	10	6	3
6. Thermoelasticity of the film at 150°C in hours, not less than	12	8	5
7. Resistance of the film to spraying at 150°C	Should withstand a test according to section 2.10		
8. Electrical strength of the film in kV/mm, not less than:			
at 20±2°C	60	55	55
at 90±2°C	30	25	25
after the action of water for 24 hours at 20±2°C	22	22	20
9. Specific volume electrical resistance of the film in Ω·cm, not less than:			
at 20±2°C	1.10 ¹⁴	1.10 ¹⁴	1.10 ¹⁴
at 90±2°C	1.10 ¹¹	1.10 ¹¹	1.10 ¹¹
after the action of water for 24 hours at 20±2°C	1.10 ¹²	1.10 ¹²	1.10 ¹²

1.3 The formula of the varnishes must be confirmed by the Ministry of Chemical Industry of the USSR and coordinated with the Ministry of Electrical Engineering Industry of the USSR and the Ministry of Public Health of the USSR.

1.4. In the production and use of the varnishes there should be observed precautionary measures which are provided in the appropriate instructions on accident prevention.

1.5 When necessary before using, dilute the varnishes up to the working viscosity with toluene (GOST 14710-69 or GOST 9880-61);

by xylene (GOST 9949-62 or GOST 9410-60), a solvent (GOST 1928-67 or GOST 10214-62) or a mixture of one of these solvents with a white spirit (GOST 3134-52) or with benzine (GOST 443-56 or GOST 462-51) in a 1:1 ratio.

1.6. The prepared varnishes must be accepted by the technical inspection of the manufacturing enterprise. The manufacture must guarantee the conformity of the produced varnishes to requirements of this standard. The manufacturing enterprise is obligated to replace free-of-charge the varnishes during six months from the shipment date to the address of the user if during the indicated period the user detects the nonconformity of the varnishes to requirements of this standard. The varnishes must be replaced under the condition of the observance of rules of transportation and storage indicated in GOST 9980-62.

An increase in the viscosity of the varnishes of up to 120 s according to the viscosimeter VZ-4 at 20°C with their storage at the user's during the indicated period does not serve as a reason for rejection if according to the remaining indices the varnishes meet the requirements of this standard.

2. Methods of tests

2.1. For the inspection by the user of the quality of the varnish and also of the conformity of the packaging, packing and marking to the requirements of this standard, the rules of sampling and methods of the tests indicated below must be used.

2.2. Taken for the batch is the quantity of varnish obtained for one industrial process and accompanied by one quality certification.

2.3 With the check of the arrived batch of varnish, the sample was selected according to GOST 9980-62.

2.4 The presence of mechanical impurities is determined according to GOST 13526-68 (section 1.5).

2.5 The color and outer appearance of the film of the varnishes are determined visually with the natural scattered light. The varnishes are applied by a pouring onto clean glass plates 90 X 120 mm in dimension. The plates are stood at an angle of 45° in a place protected from dust, held at 20±2°C for 15-20

minutes and then dried at 105-110°C during the time indicated in item 5 of the table. After the cooling, the films of the varnishes are examined.

2.6. The viscosity of the varnishes are determined according to GOST 8420-57 by the viscosimeter VZ-4 at 20°C.

2.7. The content of dry residue in the varnishes is determined according to GOST 6989-54 at 140±10°C.

2.8. The time of the desiccation of the film of varnishes is determined according to GOST 13526-68 (section 2.3.1). The varnishes are applied according to GOST 13526-68 (section 2.2.2) onto strips of telephone paper (GOST 3553-60) of brand KT-0.5 with a dimension of 100 X 200 mm in one layer. Then the strips with the applied varnish are held at 20±2°C for 15-20 minutes and dried according to GOST 13526-68 (section 2.2.3) and item 5 of this standard. The test is conducted at 20±2°C. The thickness of the film of the varnishes after drying must be 20-30 μm on one side of the specimen.

2.9. The thermoelasticity of the film of the varnishes is determined according to GOST 13526-68 (section 2.3.7) on plates of copper band (GOST 434-53) of brand MGN. The varnishes are dried according to section 2.8 of this standard. The thickness of the film of the varnishes after the drying should be 45-55 μm. Then the specimens are placed into a thermostat and held at 150°C for the time indicated in item 6 of the table. The specimens are removed from the thermostat, cooled to 20±2°C and tested according to GOST 6806-53 around a rod with a diameter of 3 mm.

2.10. The resistance of the film to spraying is determined according to GOST 13526-68 (section 2.3.12) on a tafetta ribbon (GOST 4514-48). The test is conducted at 150°C. The ribbon with the applied varnish is dried according to section 2.8 of this standard.

2.11. The electrical strength and specific volumetric electrical resistance at 20±2°C, at 90±2°C and after the action of water are determined according to GOST 13526-68 (section 2.3.14) on plates of a cold-cathode copper sheet (GOST 495-70) with a thickness of 0.4-0.6 mm. The varnishes are applied and dried

according to section 2.8 of this standard, and the second layer of varnish is dried: for varnish of brand BT-980 it is 12 hours; for varnish of brand BT-987 - 8 h; and for varnish of brand BT-988 - 6 h.

In determining the specific volumetric electrical resistance there is used the measuring and safety electrodes in the form of a foil ground to the surface of the specimen.

3. Packing, marking, transporting, and storage

3.1 The packing, marking, transporting, and storage of the varnishes are carried out according to GOST 9980-62.

DISTRIBUTION LIST

DISTRIBUTION DIRECT TO RECIPIENT

<u>ORGANIZATION</u>	<u>MICROFICHE</u>	<u>ORGANIZATION</u>	<u>MICROFICHE</u>
A205 DMATC	1	E053 AF/INAKA	1
A210 DMAAC	2	E017 AF/RDXTR-W	1
B344 DIA/RDS-3C	9	E403 AFSC/INA	1
C043 USAMIIA	1	E404 AEDC	1
C509 BALLISTIC RES LABS	1	E408 AFWL	1
C510 AIR MOBILITY R&D	1	E410 ADTC	1
LAB/F10			
C513 PICATINNY ARSENAL	1	FTD	
C535 AVIATION SYS COMD	1	CCN	1
C591 FSTC	5	ASD/FTD/NIIS	3
C619 MIA REDSTONE	1	NIA/PHS	1
D008 NISC	1	NIIS	2
H300 USAICE (USAREUR)	1		
P005 DOE	1		
P050 CIA/CRS/ADG/SD	2		
NAVORDSTA (50L)	1		
NASA/NST-44	1		
AFIT/LD	1		
ILL/Code L-389	1		
NSA/1213/TDL	2		